

Notice of Allowability

Application No.

10/798,540

Examiner

Kyoung Lee

Applicant(s)

SAVASTIOUK ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 12/28/2006.
2. ☒ The allowed claim(s) is/are 47-49, 51-53, 55-57 and 59-78.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

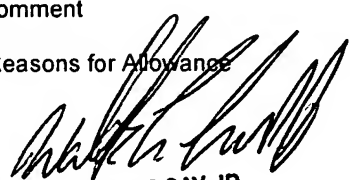
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 12/06/2006
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


WALTER LINDSAY JR.
PRIMARY EXAMINER

DETAILED ACTION

REASONS FOR ALLOWANCE

Claims 47-49, 51-53, 55-57, and 59-78 are allowed.

The following is an examiner's statement of reasons for allowance: Claim 49 is allowable because of the prior art, either singly or in combination, fails to anticipate or render obvious, the method, including step of initially forming dielectric over the top surface, with the dielectric having one or more openings which overlie the contact pads and also overlie one or more regions adjacent to the contact pads; placing solder paste into the one or more openings; and heating the solder paste in the one or more openings to melt the solder and to solder one or more contact pads of a second substrate to the one or more contact pads of the first substrate with solder obtained from the solder paste, the dielectric being present over the top surface of the first substrate during soldering. These features in combination with the other elements of the claim are neither disclosed nor suggested by the prior art of record.

The following is an examiner's statement of reasons for allowance: Claim 57 is allowable because of the prior art, either singly or in combination, fails to anticipate or render obvious, the method, including step of forming dielectric over the top surface, with the dielectric having one or more openings, the one or more openings comprising a first opening, wherein each of the contact pads occupies at least a portion of a bottom surface of at least one of the openings, wherein the first contact pad occupies a first portion of the bottom surface of the first opening but does not occupy a second portion of the bottom surface of the first opening; placing solder paste into the one or more

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openings; and heating the solder paste in the one or more openings to melt the solder and to solder one or more contact pads of a second substrate to the one or more contact pads of the first substrate with solder obtained from the solder paste, the dielectric being present over the top surface of the first substrate during soldering.

These features in combination with the other elements of the claim are neither disclosed nor suggested by the prior art of record.

The following is an examiner's statement of reasons for allowance: Claim 64 is allowable because of the prior art, either singly or in combination, fails to anticipate or render obvious, the method, including step of forming dielectric on the first substrate, the dielectric having one or more openings, the one or more openings comprising a first opening, wherein each of the contact pads occupies at least a portion of a bottom surface of at least one of the openings, wherein the first contact pad occupies a first portion of the bottom surface of the first opening but does not occupy a second portion of the bottom surface of the first opening; placing solder on the first substrate, the solder being located in each of the one or more openings, wherein said solder is not placed on the first substrate before the forming of the dielectric on the first substrate; melting the solder in the one or more openings to solder one or more contact pads of a second substrate to the one or more contact pads of the first substrate with the solder while the dielectric is on the first substrate. These features in combination with the other elements of the claim are neither disclosed nor suggested by the prior art of record.

The following is an examiner's statement of reasons for allowance: Claim 70 is allowable because of the prior art, either singly or in combination, fails to anticipate or

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render obvious, the method, including step of wherein a top surface of each of the contact pads comprises a first conductive portion and a second conductive portion less solder wettable than the first conductive portion; and wherein the one or more openings overlie both the first and the second conductive portions of at least one of the contact pads. These features in combination with the other elements of the claim are neither disclosed nor suggested by the prior art of record.

Claims 47-48, 51-53, 55-56, 59-63, 65-69, 71-78 depend from claim 49, 57, 64, or 70 so they are allowable for the same reason.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

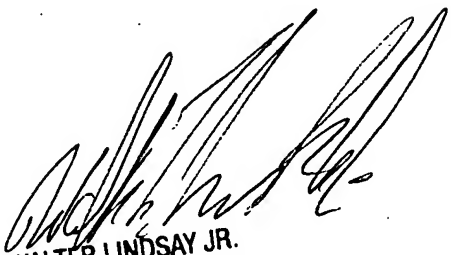
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyoung Lee whose telephone number is (571) 272-1982. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KL 1/15/07



WALTER LINDSAY JR.
PRIMARY EXAMINER